【1】 POWER ON FAILURE：

1. **Check whether the BREAKER is ON or not. (Refer to page 2 in Electrical Diagram Manual)**

   Solution:

   If the breaker is not ON, switch it to ON position. Or it is possible malfunction of breaker, please turn OFF and ON again.

2. **Check whether the EMERGENCY STOP switch is connected well. The normal situation of E-STOP is N.C. (Normal Closed status).**

   Solution:

   If it is not connected well, use soldering iron to re-connect it. Or replace it, if it is malfunction.

3. **Check whether the TF2 transformer or FU1 (2A) is burned (Refer to page 9 in Electrical Diagram Manual).**

   Solution:

   If TF2 is burned, replace it with a similar type transformer. If FU1 is burned, replace with a new fuse (2 Amp).

4. **Check whether the fan of SW-POWER fan is rotary or not.**

   Solution:

   If the fan does not rotate, it means the power is failure. Renew the SW-POWER.

【2】 NO DISPLAY ON THE SCREEN：

1. **Check whether TF5 transformer or MG1 is burned (Refer to page 9 in Electrical Diagram Manual).**

   Solution:

   Replace TF5 with a similar type transformer if it is burned.
   If MG1 is burned, replace it with a similar type magnetic switch.

2. **Check whether the Power Cable that in the rear of 830 PC has 110 VAC power source.**

   Solution:

   The Power cable from TF5 to Monitor.
   (Refer to page 17 in Electrical Diagram Manual.)

3. **Check whether the screen power or the indicated lamp is ON in the control panel.**

   Solution:

   If the Indicated Lamp is not ON, check the screen power cable. Or renew the screen, if it is malfunction.

【3】 ERROR MESSAGE APPEARS WHEN ACCESS INTO SYSTEM PROGRAM

1. Keyboard error.

Solution:

a. Check whether the LED is ON or not (Refer to page 5 in Electrical Diagram Manual). If the LED is not ON, please make sure the connector is properly connected.

b. Replace the keyboard of controller with the standard PC-AT keyboard and restart the controller.

- If it is normal, it means the keyboard of controller is out of order. Renew the KEYNEW.PCB board.
- If it is still abnormal, it means the Mother board is out of order. Renew the Motherboard.

c. Check whether the key wedged of the keyboard of controller.

2. CMOS Setup failure

Solution:

a. Renew the back up battery in the PC. The battery could be failed due to long time transportation.

b. Then BIOS must be reset. (Refer to BIOS SETUP chapter.)

3. DISK BOOT failure

Solution:

a. Check whether is a disk in the disk driver A. Take out the disk and restart. Go into PC-SETUP to set "Boot sequence : C,A".

b. Confirm whether the "HARD DISKS TYPE" setting is correct.

c. Hard disk drive (HDD) might be out of order or the software is wrong. If the hard disk drive (HDD) is out of order, please renew it and transmit the system software again into the new HDD

4. Bad command or filename

Solution:

a. Check whether is a disk in the disk driver A. Take out the disk and restart. Go into PC-SETUP to set "Boot sequence: C,A".

b. Format the hard disk driver.

5. DRIVE which is not ready error, insert boot diskette in A: press any key when it is ready.

Solution:

The COMMAND.COM is recovered by different DOS version. It needs the same DOS version file to copy in the controller.

a. One section of hard disk driver is failure. Use the driver A to power on the machine and copy the important files to the floppy disk, Format the hard disk driver.

6. DEVICE I/O ERROR IN *******OR SHUT DOWN.

Solution:

a. If drive D created from RAM, maybe the HIMEN.SYS can not execute successful so the RAMDRIVE can not open the file. Check the directory of drive D to see whether the "VOLUME in drive D is MS-RAMDRIVE" appears on the screen.
   If drive D created from one partition of hard disk, maybe the data is lost so must be renew FDISK and FORMAT the hard disk.
b. Check whether the RAM card is failure, Renew the RAM card if it is malfunction.
c. Go into the directory DAT copy the all *.BAK files into *.DAT files and power on the machine again.
d. If it still can not work, please renew execute DAT.EXE. Power on the machine again and the system parameters must be re-input.

7. Battery Low or CMOS check SUM failure

Solution:

a. PC-SET error. Use the standard keyboard to set the PC-SETUP.
b. After steup a, restart the machine. If the problem still remains or the problem appears in the few days. It is caused by battery failure. Replace with a new battery and reset the PC-SETUP.

[4] AC DRIVE SIGNAL AND FAILURE：

(1)INDICATE LIGHTS MESSAGES:

1. POWER ON (green)：The light is power indication. After the power supply input, it will be lighted.
2. SHORT(red)：It means that the power cable of motor (U, V. W) would be short. Or, the transistor of driver would be short.
3. OVER_VOLTAGE(red)：It means that the voltage of capacitor is too high(more than 430VDC). Normal is 300VDC.
4. OVER CURR(red)：The alarm of over current. It means that the electric current of driver output is too high.
5. OVER TEMP(red)：If an excess thermal condition exists in the driver, this fault occurs.
6. RESET(red)：During the first second of power up or if the reset input is active, this LED will be ON.

(2) TROUBLE SHOOTING

1. No power on indicator.

a. Check the input power supply AC220V. Check whether the input power below AC 80V.
b. Check whether the FUSE1, FUSE2(30mm 15A for 10SIN, 20A for 15SIN) which inside the driver is burned.
c. Check the thermal resister of CL1 by multi-meter. It must be on 1-10Ω. If open, please change it. Check the terminal 23(U), 22(W), 21(V) to 20(+) or 19(-) on U29. Maybe it is SHORT.
d. Check whether the KBPC3506(BR1) Bridge is out of order.
e. Check whether the FUSE3(20mm 2A) is burned.

2. SHORT ALARM

a. Press the RESET button to release the alarm automatic.
b. Check whether the U, V, W and on TB1 ⏚ is SHORT.
c. Check whether the wiring of motor are SHORT.
d. Check whether the load of machine is too large. Or Acc/Dec too fast.

3. OVER VOLTAGE ALARM

a. Press the RESET bottom to release the alarm.
b. Check whether the input power exceed AC260V.
c. Open the case of driver to check the VR6 and VR7. The VR6 is on 4 position normally. The VR7 is on 3.5 position normally.

4. OVER CURRENT ALARM

a. Press the RESET bottom to release the alarm.
b. Check whether the load of machine is too large or the lubrication system is not good.
c. Connect the cable to another new motor to check whether the encoder of old one is out of order.

5. OVER TEMP ALARM

a. Press the RESET bottom to release the alarm.
b. Check whether the electric current is too high.
c. Check CN1 on the driver board. If TSW! And TSW2 must be short. If open will cause alarm.

【5】HOME RETURN FAILURE：

1. System parameter does not reset after you renew HDD.

Solution:

a. Under main function. Press AND 1 keys at the same time to enter into the INPUT PASSWORD screen.
b. Key in the password 530509 (the figures you key in will not be displayed).
c. Check whether the setting of the system parameters is correct. (Refer to system parameters sheet)

2. The position of home return failure is different every time.

Solution:

a. When the limit switch from on to off, please check this point of machine. It must be the same point every time. If not please re-new the limit switch.
b. Maybe the distance of motor INDEX is wrong. The motor index distance must be half of motor rotation distances that according to difference machine model. Please into system parameters item 3 (XYZ SET) to adjust the value of "HOME MOVE".
c. The speed of INDEX is too fast. Please into system parameters item 3 (XYZ SET) to reduce the value of "INDEX RPM" to smaller.

3. Encoder (built-in) INDEX signal can not read by controller.

Solution:

Check whether the encoder of motor is out of order or check whether the connection from the motor to TRANSIN.PCB and the TRANSIN.PCB to MON202.PCB are problem.

【6】X, Y AND Z DIGITAL DISPLAY FAILURE：

1. In JOG Mode you can move table, but can not move display figures Accordingly.

Solution:

a. Check whether +5V LED on TRANSIN.PCB MUST BE ON. (Refer to page 4-15 in Electrical Diagram Manual). If the LED on the TRANSIN.PCB is not ON, then renew the board.

【7】EXCUTION FAILURE：

1. Some programs can be executed in controller, but some programs can not.

Solution:

a. Please e-mail us the program that can not be executed. We would test it in our company.
b. Use the latest version of software to update. It needs to renew the system parameters after update.
c. The settings of the program are error.

2. The dimensions are error after cutting a circle or a square.

Solution:

a. Do backlash compensation.
Adjust the backlash of X, Y and Z-axis. Change the X, Y and Z backlash of system parameters into zero. Go into HANDLE mode to measure the backlash values and renew the system parameters.
b. The system parameters PULSE SCALE X, PULSE SCALE Y and PULSE SCALE Z are set error. The setting is as following:
Pulse of motor : 2000 Pulse
Ball screw pitch : 5000 um
pulley ratio : 1/1
Pulse scale =(5000) ÷(2000*4)=0.625
The settings are all the same for 3 axes.

3. DNC transmission failure

Solution:

a. Check the interface of RS-232. (Refer to RS 232 interface)
b. Check the communication protocol are same for the controller and PC.
Communication protocol setting of controller:
Com port: 1
Band rate: 9600
Data Bits: 8
Stop Bits: 1
Parity Bit: None
c. Change the communication protocol of controller. Press " 1 530509" into system parameters. Press "11: DNC SET" to revise it. The PC must have DNC transmission software.
d. Before transmission, the controller must be in receiving status. Otherwise, the data could be lost.

4. When the tool is broken as cutting, how to continue the machining work.

Solution:

The Index no. will appear on the execution screen when machining. Write down their values and go into program edit after changing the tool. Input the value into Index No, and then execute the program again. The machining operation continues from the part of when the tool was broken.

【8】HANDLE MODE FAILURE

1. Go into handle function after you Power On. The remote control box is sometimes normal, but sometimes abnormal.

Solution:

a. Some wires are broken on remote control box. Use multi-meter to measure it.
b. Renew all wires.
c. The MILCTL.PCB is out of order. Renew it if it is malfunction.
d. The MIO2.PCB is out of order. Renew it if it is malfunction.

2. Go into the Trans File of 3D CAM. The transmission of the first file is successful, but of the second is failure or the screen appears "DISK ERROR" message.

Solution:

a. Check whether the floppy disk is OK. Take the disk to another PC to check it.
b. Replace with a new floppy disk driver.
c. Renew the motherboard and test again.

【9】THE PROCEDURE OF FDISK AND FORMAT HARDDISK DIVER

Solution:

a. Insert the boot disk into the floppy driver A. Insert a standard keyboard.
b. Power on the controller.
c. Press & 2 into the DOS system.
d. Give "CD\DOS" command
e. Give "FORMAT A:/S" command.
f. After step e, copy all the files under DOS directory into A floppy disk.
*Please note that A disk must have the follows files.
--COMMAND.COM↵
--HIMEN.SYS↵
--RAMDRIVE.SYS↵
--FDISK.EXE↵
--FORMAT.COM↵
g. Insert a new formatted disk into the floppy driver A. Copy C:\AUTOEXEC.BAT, CONFIG.SYS and TCPIP copy into A as following:
CD\↵

COPY AUTOEXEC.BAT A:

COPY CONFIG.SYS A:

MD A:TCPIP

COPY TCPIP A:TCPIP

h. Insert the other new formatted disk into the floppy driver A. Copy the DAT.EXE and entire files under C:\ DAT into A as following:

-CD\DAT

-COPY DAT.EXE A:

-COPY CAXIS.dat a:

-COPY MISC.dat a:

-COPY MOTORD.dat a:

-COPY MOTORS.dat a:

-COPY MOTORP.dat a:

-COPY MPG.dat a:

-COPY SAXIS.dat a:

-COPY SYSTEM.dat a:

-COPY XYZAXIS.dat a:

-COPY PITCH1.dat a:

-COPY PITCH.dat a:

-COPY TURRET.dat a:

-COPY DNC.dat a:

-COPY OPTION.dat a:

-COPY M2029.dat a:

i. Insert the other new formatted disk into the floppy driver A. Copy C:\CTEK\CTEK1.EXE, C:\CTEK\CTEK2.EXE, C:\CTEK\CTEK3.EXE and *.BAT files into A. The CTEK1.EXE file needs a disk and the others need a disk. The commands are as following:

-CD\CTEK

-COPY CTEK1.EXE A:

-Put the other new floppy disk.

-COPY CTEK2.EXE A:

-COPY CTEK3.EXE A:

-COPY *.BAT A:

(The following steps suit for new hard driver. Please ask the DOS version and start disk from the manufacture)

j. Start the controller. Into the BIOS to set the "Boot sequence : A,C". Put the start disk into A: driver.

k. Wait the screen appears A:\>

l. Partition of C & D driver as following:

-FDISK↵

-Select 4: Display partition information.

If there have partition already on C & D driver, please delete all as following:

-Select 3: Delete partition or Logical Dos Driver.

-Select 3: Delete Logical Dos Driver(S) in the extend DOS partition.

-D↵

-↵

-Y↵

If there have E driver, please also delete it as following.

-Select 3: Delete Logical Dos Driver(S) in the extend DOS partition.

-Select 2: Delete Extend Dos partition.

-Y↵

After the delete steps, please come back to the main screen.

-Select 3: Delete partition or Logical DOS Driver

-Select 1: Delete Primary Dos partition.

-1↵

-Y↵

Back into main menus

-Select 1: Create Primary Dos partition.

-Y↵

After 4-5 seconds, system would request RESTART. Press any key to restart. After restart already, input FDISK.

-Select 1: Create Dos partition or Logical DOS Drive.

-Select 2: Create Extended Dos partition.

-Input 2047↵

-ESC↵

-2047↵

-ESC↵ and system would come back to main menus.

After this step, the C & D driver are already. Then,

-Select 4: Display partition information.

The screen will appear PRIDOS & EXT DOS are 2047Mbytes.

-Y↵ and the screen appear D: 2047Mbytes

After all step, pressing ESC key. The system will restart and the FDISK is finish.

m. Format C & D driver. The commands are as following:

-FORMAT C:/S↵

-FORMAT D↵

-C↵

-MD DOS↵

-COPY A:*.* DOS↵

After these steps, restart the system. Into BIOS to set "Boot sequence: C, A". Then take out A floppy disk.

n. Restart the system and screen appear C:>

o. Put the floppy disk that has the TCPIP file into A: driver.

-COPY A: AUTOEXEC.BAT↵

-COPY A: CONFIG.SYS↵

-MD TCPIP↵

-COPY A: TCPIP TCPIP↵

p. Put the floppy disk that has the DAT file into A: driver.

-MD DAT↵

-CD DAT↵

-COPY A: DAT.EXE↵

-DAT↵

-COPY A:*.DAT

q. Put the floppy disk that has the CTEK1.EXE file into A: driver.

-CD↵

-MD CTEK↵

-CD CTEK↵

-COPY A: CTEK1.EXE↵

r. Put the floppy disk that has the CTEK2.EXE and CTEK3.EXE file into A: driver.

-COPY A: CTEK2.EXE↵

-COPY A: CTEK3.EXE↵

-CTEK1↵

-CTEK2↵

-CTEK3↵

-COPY A: *.BAT↵

s. Make a sub-directory BLD under CTEK directory.

-MD BLD↵

-COPY A: BLD.EXE↵

-BLD↵

t. After S step, all the processes are complete.

【10】 ALARM MESSAGE：

1. X+(-)Limit ON: Over machine travel or limit switch wire short circuit. Also Y and Z axis.
2. X+(-) soft limiter alarm: Over software travel. Also Y and Z axis.
3. X drive alarm: Check X-axis driver alarm light. Also Y and Z axis.
4. X axis encoder alarm: X axis motor encode not feedback. Please check the motor's encoder or wiring or MON202.PCB. Also Y and Z axis.
5. X motor thermal alarm: X axis motor too hot. Change the motor or driver. Also Y and Z axis.
6. X over lag err alarm: The X axis motor follow error. Check the motor or wiring or driver or MON202.PCB problem.
7. STOP: Release the STOP key on the remote control box.
8. Spindle alarm: Spindle jumped off.
9. Unclamp Limiter Alarm: The unclamp limit switch or wiring broken.
10. Clamp Limiter Alarm: The clamp limit switch or wiring broken.
11. ATC In Limiter Alarm: The ATC In Limit switch or wiring broken.
12. ATC Out Limiter Alarm: The ATC In Limit switch or wiring broken.
13. Door Lock Alarm: The door lock Limit switch or wiring broken.
14. Lubricator Alarm: There is no oil in the Lubricator.
15. Air Alarm: No air.
16. Motor thermal alarm: Motor too hot.
17. C axis over rpm: C axis rpm too fast. Same as B axis.
18. C & B hydraulic alarm: C & B hydraulic problem.

【11】Default BAT (batch) files function

Please press & 2 into the DOS system. C-tek installs 6 bounded batch files. You can make COPY or BACKUP files from controller directly. They are:

1. A.BAT

The content is "TEST".

This function is from DOS controller software. Press button from control panel to achieve it.

2. B.BAT

The content is "COPY A: *.*".

This function is to copy the file from A: driver into C:\CTEK directory.

Press button from control panel to achieve it.

3. C.BAT

The content is "COPY A: *.* C:\DAT".

This function is to copy the file from A: driver into C:\DAT directory.

Press button from control panel to achieve it.

4. G.BAT

The content is "SHOWPA20.EXE".

Press button from control panel to achieve it. This function is to copy the system parameters into C:\DAT. Input the series number of machine and controller. The file name would be automatic done as machine series number.TXT. You can print this number.TXT file on paper.

5. M.BAT

The contents are as following:
Copy c:\dat\CAXIS.dat a:
Copy c:\dat\BAXIS.dat a:
Copy c:\dat\MISC.dat a:
Copy c:\dat\MOTORD.dat a:
Copy c:\dat\MOTORS.dat a:
Copy c:\dat\MOTORP.dat a:
Copy c:\dat\MPG.dat a:
Copy c:\dat\SAXIS.dat a:
Copy c:\dat\SYSTEM.dat a:
Copy c:\dat\XYZAXIS.dat a:
Copy c:\dat\PITCH1.dat a:
Copy c:\dat\turret1.dat a:

Press

button from control panel to achieve it. This function is to copy the system parameters into A: driver.

6. N.BAT

The contents is "COPY C:\DAT*.TXT A:"
*: Machine series number

Press button from control panel to achieve it. This function is to copy the *.TXT into A: driver.

【12】COMPARISON TABLE FOR KEYBOARD

Controller	**PC**	Controller	**PC**	Controller	**PC**	Controller	**PC**
F1	**F1**	1	**1**	2	**2**	3	**3**
F2	**F2**	4	**4**	5	**5**	6	**6**
F3	**F3**	7	**7**	8	**8**	9	**9**
F4	**F4**	0	**0**	.	.		
F5	**F5**	+	**+**		**P**		
F6	**F6**	-	**-**		**;**		
F7	**F7**		**A**		**B**		**C**
F8	**F8**		**G**		**M**		**N**
F9	**F9**	G	**T**		**U**		**V**
	F10 ESC J	M	**X**		**Y**		**Z**